SEQUENCE LISTING

```
<110> Benjamin, Thomas L.
      Li, Dawei
      Mok, Samuel C.
      Cramer, Daniel W.
     Ma, Yupo
<120> Diagnosing and Treating Cancer Cells
  Using Sal2
<130> 00742/066002
<150> US 09/812,633
<151> 2001-03-19
<150> US 60/216,723
<151> 2000-07-07
<160> 21
<170> FastSEQ for Windows Version 4.0
<210> 1
<211> 1005
<212> PRT
<213> Homo Sapiens
<400> 1
Met Ala His Glu Ser Glu Arg Ser Ser Arg Leu Gly Val Pro Ala Gly
                                    10
Glu Pro Ala Glu Leu Gly Gly Asp Ala Ser Glu Glu Asp His Pro Gln
                                25
Val Cys Ala Lys Cys Cys Ala Gln Phe Thr Asp Pro Thr Glu Phe Leu
                            40
                                         75
```

45 Ala His Gln Asn Ala Cys Ser Thr Asp Pro Pro Val Met Val Ile Ile Gly Gly Gln Glu Asn Pro Asn Asn Ser Ser Ala Ser Ser Glu Pro Arg Pro Glu Gly His Asn Asn Pro Gln Val Met Asp Thr Glu His Ser Asn 90 Pro Pro Asp Ser Gly Ser Ser Val Pro Thr Asp Pro Thr Trp Gly Pro 110 105 Glu Arg Arg Gly Glu Glu Ser Ser Gly His Phe Leu Val Ala Ala Thr 125 120 Gly Thr Ala Ala Gly Gly Gly Gly Leu Ile Leu Ala Ser Pro Lys 135 Leu Gly Ala Thr Pro Leu Pro Pro Glu Ser Thr Pro Ala Pro Pro 155 150 Pro Pro Pro Pro Pro Pro Pro Gly Val Gly Ser Gly His Leu Asn 170 165 Ile Pro Leu Ile Leu Glu Glu Leu Arg Val Leu Gln Gln Arg Gln Ile 185 180 His Gln Met Gln Met Thr Glu Gln Ile Cys Arg Gln Val Leu Leu 200 Gly Ser Leu Gly Gln Thr Val Gly Ala Pro Ala Ser Pro Ser Glu Leu 215 Pro Gly Thr Gly Thr Ala Ser Ser Thr Lys Pro Leu Leu Pro Leu Phe

225					000										
225		T10	Lvc	Dro	230		Πh~	Cox	T	235		7 J ~	C	C	240
261	FLO	116	пуѕ	245		GIII	1111	Ser	250		ьец	Ald	Ser	255	Ser
Ser	Ser	Ser	Ser 260	Ser		Ser	Gly	Ala 265			Pro	Lys	Gln 270		
Phe	His	Leu 275	Tyr		Pro	Leu	Gly 280		Gln	His	Pro	Phe 285		Ala	Gly
Gly	Val 290	Gly	Arg	Ser	His	Lys 295	Pro	Thr	Pro	Ala	Pro 300		Pro	Ala	Leu
305			Thr		310					315					320
			Gly	325					330					335	_
			Thr 340					345					350		
		355	Ser				360					365			_
	370		Lys			375					380				
385			Ile		390					395					400
			Cys	405					410					415	
			Arg 420					425					430		
		435	Pro				440					445		_	
	450		Met			455					460				
465			Gly		470					475					480
			Ala Ala	485					490					495	_
			500 Glu					505					510		
		515	Ser				520					525			
	530		Leu			535					540				
545			His		550					555			_		560
			Leu	565					570					575	
			580 Lys					585					590		
		595	Ala				600					605			
	610		Pro			615					620				
625			Leu		630					635					640
			Lys	645					650					655	
			660 Phe					665					670		
		675	Pro				680					685	_		
USII	690	CYS	FIU	TTE	СУБ	695	пур	пÃр	LIIG	1111	700	AIG	vaı	1111	ьeu

```
Gln Gln His Val Arg Met His Leu Gly Gly Gln Ile Pro Asn Gly Gly
705
                    710
                                        715
                                                            720
Thr Ala Leu Pro Glu Gly Gly Gly Ala Ala Gln Glu Asn Gly Ser Glu
                                    730
                725
Gln Ser Thr Val Ser Gly Ala Gly Ser Phe Pro Gln Gln Gln Ser Gln
                                745
Gln Pro Ser Pro Glu Glu Glu Leu Ser Glu Glu Glu Glu Glu Asp
                            760
                                                765
Glu Glu Glu Glu Asp Val Thr Asp Glu Asp Ser Leu Ala Gly Arg
                        775
Gly Ser Glu Ser Gly Gly Glu Lys Ala Ile Ser Val Arg Gly Asp Ser
                    790
                                        795
                                                            800
Glu Glu Ala Ser Gly Ala Glu Glu Val Gly Thr Val Ala Ala Ala
                805
                                    810
Ala Thr Ala Gly Lys Glu Met Asp Ser Asn Glu Lys Thr Thr Gln Gln
                                825
                                                    830
            820
Ser Ser Leu Pro Pro Pro Pro Pro Asp Ser Leu Asp Gln Pro Gln
        835
                            840
                                                845
Pro Met Glu Gln Gly Ser Ser Gly Val Leu Gly Gly Lys Glu Gly
                        855
                                            860
Gly Lys Pro Glu Arg Ser Ser Ser Pro Ala Ser Ala Leu Thr Pro Glu
                                        875
                    870
Gly Glu Ala Thr Ser Val Thr Leu Val Glu Glu Leu Ser Leu Gln Glu
                885
                                    890
Ala Met Arg Lys Glu Pro Gly Glu Ser Ser Arg Lys Ala Cys Glu
            900
                                905
Val Cys Gly Gln Ala Phe Pro Ser Gln Ala Ala Leu Glu Glu His Gln
                            920
Lys Thr His Pro Lys Glu Gly Pro Leu Phe Thr Cys Val Phe Cys Arg
                        935
                                            940
Gln Gly Phe Leu Glu Arg Ala Thr Leu Lys Lys His Met Leu Leu Ala
                                        955
                   950
His His Gln Val Gln Pro Phe Ala Pro His Gly Pro Gln Asn Ile Ala
                965
                                    970
Ala Leu Ser Leu Val Pro Gly Cys Ser Pro Ser Ile Thr Ser Thr Gly
                                985
            980
Leu Ser Pro Phe Pro Arg Lys Asp Asp Pro Thr Ile Pro
                            1000
        995
```

```
<210> 2
<211> 16080
<212> DNA
<213> Homo sapiens
```

<400> 2

```
atatcacacc ccagctggct atgtaatcat gaaataagga gaaacacata aatatttggt 60 taaaacacct ttaatgatag agggaaagac actaatatct cccgtctgtt cttgacattt 120 tactaggtta ggaagctctg gagcctacag cttgaggaga agccatcgtt caagtcagtc 180 aatagcaaaa ccctcactct ctcctcctca gaactcctgt tccaaatgat cctatgttaa 240 gagtaaatac tacaactcat tacaagacgg agaggcaggg aggacgccac ctggagctgg 300 gactcttaag aaccagacaa tgacaaagac acaagcccca gcctacggat aggcaaaatg 360 ggtaggggtc ttgaaagagg atactagga aaatacaagg ggccagggaa taaaggaggg 420 agttatctaa aactagaagc atactagtgc taggaaatcc cccatgatcc ctggtacacc 480 gaatttgagg ccttttccct tacatcatgt ccctttctta gtcacatagg taccagcaag 600 ccctatgttc tagcaacatt ccctaactct ctcatcatta gtcacataag gagacctctt 720 ggcaagaaat cagcttgttt cccaactttg agaggtcatc atgaatgaga agctggagag 780
```

gtcttggcac actgaccagc caaaaccttt accttaatgt gaccatcagg ggatttactg 840 ggaaaatttt cctatgccct tccttcattt ctccctactt cctagggttg ggtcaccaat 900 tactggagca tcttcagtac cggcaccttc tggagcaggg ggaggaagaa ggaatgtaca 960 gtttgctact tcttgtctat gatgggcttc tcaggcactg ccttgggtgc aggaggctga 1020 aataggaggg gggctgtctt ctccttggct tccctggatc ccattgttgg aggcaccttc 1080 ccagccacag ttcctaggcc aaacagcact ggtggggcca ggcttggagt ggtagtggag 1140 gtggagctgg aattccaggg cttcatgggc aggccatttg acaggaatgc cacatactgg 1200 ttctagaaag ataggggacc catacccacc agctgagcag aaaggtcacc ccagaggagt 1260 ggcactgggc cctccagaga cagctgccag ccctttttgg ctaggctgca atgccaaatg 1320 taggtgctca ggtgcaccta ccaaagggaa agggagagga gagaggaggg ggaagaaggg 1380 tcacaccagg gaagctggag agggttcccc ttgagaaagc tgcagagaat ctatgttcct 1440 caggtacaaa gaatgaggag ggaagaaaaa ttccttaggg ggccatcccc ttgtaagcac 1500 agtaatttcc aagctcaggg actacagaaa agccactagg gacataacat gttaagaact 1560 tagagaaaaa gacaaaatca gggctcataa ctctgggagg tccttttgtg aagctgtttc 1620 tgctctgtgg gacaaagagc agcaggtaca gaaaaacagg ctcatgggat cgtggggtca 1680 tetttteggg gaaaggggga gageeetgtg gaggtgatgg aaggegaaca geeagggaet 1740 agagaaagag cagcaatatt ctgagggcca tggggggcaa agggctgtac ctggtggtgt 1800 gccaggagca tatgcttctt gagggtagcc cgctcaagaa agccctgcct gcagaaaaca 1860 caagtgaaga gcggcccctc cttggggtgg gtcttctgat gctcctccag agctgcctgg 1920 gagggaaagg cctggccaca cacttcgcag gcctttctgc tgctgctctc tcctggctcc 1980 tttctcattg cctcctgcag gctcagctcc tctaccaagg tcacgctggt ggcttcccct 2040 tctggggtga gtgctgatgc cggacttgag cttctctccg gtttgccccc ctcttccttg 2100 cctcctaaaa caccactgct tccctgctcc attggctgag gctgatccag gctgtcaggt 2160 ggtggtggtg gtggcaaaga agactgttga gtagttttct cattactgtc catctccttc 2220 ccagctgtgg ctgctgccgc cactgtcccc acctcctcct ctgccccaga tgcctcttct 2280 gaatcacctc tcactgatat tgccttctca cctccactct ctgagcctct ccctgccagg 2340 gaatetteat cagteacate tteetettet teeteateet eetetteete eteeteagae 2400 aactcctctt ccggtgatgg ctgctgggac tgctgctggg ggaaactccc tgccccggag 2460 actgtagatt gctcggagcc attctcctga gcagctcctc caccttcagg gagtgcagta 2520 ccaccgttgg ggatctggcc ccccaggtgc atccggacat gctgctgcag agtgacagca 2580 ttggtgaact tcttctggca gatggggcag gaattctgtg cccgggcagc tggactggcc 2640 ttgtggccca cgaaatgtgc acgcagatta cccctggtgg agaaggctct gccacacact 2700 ttgcatttga agggcctctc acctccatgt tggccataat gaaggcgtag ggcccgagga 2760 cagctaagca ctcggagaca gatgacacac tggttaggtc cagaagaggc tgaggatgaa 2820 ggtgcagggg cagaggtggt gggggctcct gaggcagctg aggtcaccgc cacagctcct 2880 tgccggtcaa tcttttctac cagttgctgc agctttgatg tctcagaggg tgaggccccc 2940 aagggctcta gcacataggg gaaggggaag ctgccagtgg acttgaagtg gttggtaagc 3000 agtgcccagc ttggtagtga agtcaccaac ttacttagtt gcatgcgagt tgccgtgcta 3060 ctttctgcca ctccactgat ggctgagccc tcactccctg ggggggtgtt ttcatcagct 3120 ttattcttgg gttccactgc tttcatgagc acaaacttat tgaaagcagg gagtcctgga 3180 geogtggetg tgeetgeact ggtggagage agagteagge tetetgtgge aetgagtget 3240 gttgtggagg ccaccagagg cttgcgctca acccctccac ctggagtggc tgcctcctcc 3300 teggeettet etggtggeac ggacatacea taaggeaage caetgetggt aatgacatag 3360 tctaggtgct ctggtactgg gtgtgggttc atctgcacat gtgggtactt ctcacgatgc 3420 cggtggaaat gcactttgag gttgccacgg gtggtaaaac ggtttccaca gacattgcac 3480 ttatagggcc tctcacccgt gtgggaacga aggtggatct gcagggcact gtcactgcca 3540 aatactttgg cacagaagcg gcatttgtgc cttccaccag gcttctccaa gggacccatc 3600 acttctccgt agctcagctc accacttcca ttctttggct tcaggagccc tggggaggca 3660 gtggcctcaa ggcctcgggc tgccccaaga cactgtgctg ccagtagtcc cgtggtgctt 3720 gggaatgcca gatgaggcga ggcaatcagc tgatctgtgc tgcctggcaa ggctggggaa 3780 ggggcagggg tgggtttgtg gcttcgccca acccctccag cagagaaagg atgctgtgac 3840 cccagtgggt ggtaaaggtg gaagaaggcc tgcttgggcg tttctgcccc tgaagaggaa 3900 gaggaggagg aggaggaaga tgccagtgtc ttgctggttt ggacaggctt gatggggctg 3960 aagaggggta gtaggggctt ggtggaagag gcagtccctg tcccaggtag ctctgaggga 4020 ctggcagggg cacccaccgt ctggcctaag gagccaagca acagcacctg cctgcagatt 4080 tgctcagtca tctgcatctg atggatctgc cgctgctgca gcacccgtag ctcttccaag 4140 atcaggggga tattcaagtg gccactgcct acccctgggg gcggaggggg tggtggagga 4200 ggagggggtg caggggtcga ttctggaggt aatggggttg ctcccagctt gggactggcc 4260 aagatcaggc ccccgcctcc cccagccgct gtacctgtgg cagcgaccag gaaatgccct 4320

```
ggagactcct ctcctctct ctctgggccc caggtgggat ccgtgggcac ggaggaccca 4380
gaatctgggg ggttgctatg ctctgtgtcc atgacctgag gattattgtg accctcaggc 4440
cggggttcag aggaggccga agagttgttg gggttctcct ggcccccaat tatcaccatt 4500
acaggagggt cagtagaaca tgcgttctgg tgggcgagga attcagttgg gtcagtgaat 4560
tgtgcgcagc acttggcaca gacttggggg tgatcctcct cgctagcatc acctggggag 4620
acaaggaggc cagtaaccgc tagttggggg tggggagatg agctcaccat cagggccatg 4740
cagaagteta gageteagge etgateegtg tggacaggag acaaccegge atggggcagg 4800
ggggtgggga gggaggaggg gaggggggca agagcatgct actcccctcc tcaqccaccc 4860
teeetteece aggecaeaag egagtteaeg gaataggtgt ggggaeaggg geetaegeag 4920
agaatcatgc attttctccc acccaccgaa agtcttcgcc gcccctgcgc atccccctcc 4980
gccccaccc ctgcccagcc cgaccgaccc taccgcacct ccgagctctg ccggctcccc 5040
gcagggcacc ccgagacgag agctcctctc ggattcgtgc gccatggttg tgggggaagt 5100
ggagggccag gtggggtggg agacaatgga tattgggatt gagggaggcg atggccqctq 5160
ggtctgcggc agcctctgca cccagcggcc cagactgcgg agatggagat cqqcaqcqqc 5220
gggggcaggg agcagcggcg gagggggagg ggagcgagga ggcggggaga agctggagtq 5280
agaaagcggg gagaggggag atctggggagg agctgatgag gaggggagtt tatggggagg 5340
agctgctggg gagggaggcg ggagctagag gaggcgggag aagggagcgc tagcgggggc 5400
gtgggggcgg gagctcagag ctcgggagag tttccggagg cgcagtgaca ggtgctgtga 5460
agcactgegg gggtecacet tteceggtee etggeeaget ecceecatet geagatgeet 5520
ttgcccaggc ctaccctcct cccccgccc tcccctccta agctctaggg gcacagtggg 5580
aaacgtagcc ctgctcagtg gagcaaggcg ataggcttct cttatttttc tttggataaa 5640
ggatccgctg agcttggaaa aagtggattc cagagagggt cgtctgatct cctcagaggt 5700
ctgagggcca gaagaagagg gggagatcag aacatccact cctcaccagc acacaccc 5760
caaaatattc gaagttttgt ctcgtctttc tcacttccat tcccacccta cccccatccc 5820
tctccacaaa agaagtttct cagggtgggc ggctgcaagg tagaatttcc caggaagtca 5880
tttcaggact ctctgcggaa cactaagccc cttcactccc cgcccctcct ccccctgaat 5940
aatagctgaa tgcaggttac tccgcagatc gcccagccta cacaacacct aattcataga 6000
gtccatgctt atttaataag ccatctccta tttagtaccc tcttcctcct ctattctcct 6060
cttgcaacat tcctcacacc gtcactatta aagacagtgg gtttggggag acgctagcct 6120
gcagaggcct acggaggccc acccagctct aacctggggg ggaggggagc cctcttgaaa 6180
caatgcggta ggaactacca ggcagccctc agtgtctaaa gccctttcag ccccagcctg 6240
atttgaatgc ttagaaatag ctaacacctg ctcaccatca cagaggcagc ctcctattca 6300
gacaggataa gtaagaataa aatgcctcct ggaccaggta ttctggcatt ctcttttta 6360
ccttgaaatg agtcttaaag tgcttcccac ttcctaaaat actttctctt acatgcagga 6420
agtgaccaca agtccttggt tttgtggttt ccctgggcat cagtaaacct aaattgtttt 6480
aatcccagtt ctattcttgc ctcactgata aaactgagac atggtggtca gtcacaccat 6540
gttataccac cgtttccctc ttcataaagt ggtaatattg tagctgcagt attttactca 6600
gaaaaatatt gtggggacaa aaaattgaaa aattggacaa tattaatgtg taaaccaggt 6660
atggtggtgc acacttgtag ccccagctac ttgggaggct gaggcaggag aattgcttta 6720
gtccaggagt ttgaggctgc agtgagctgt gatcacacct gtgaataacc actgccctcc 6780
agcttcggca acatagtgag gccccattac tttaaaaaaa aaaaaaagcc gggcgcggtg 6840
gctcactgta atcccagcac tttgggaggt gggcagatca cgaggtcaga agttccagac 6900
cagcatggcc aacatgttga aaccccgtct ctactaaaaa tacaaaaatt agctgggcat 6960
gatggtacac ctttaatccc agctactggg gcagctgagc caggagaatg gcttgaaccc 7020
aggaggtgga ggttgcaggg ggctgagatc gtggcattgc actccagcct gggcaacaag 7080
agtgaaactg cgtctcaaaa aaaaaaaaaa gtctaaaaaa attaatatgt acatgtgaga 7140
tttttaaagt ttggggagtc ctgaatttaa tcaatgagat aatttacatt gtcagtagca 7200
aaataatcga agtaacctta aatacacata tactaaaatt agatctgttt tccatgttgt 7260
ttgttaatct tattaatttc tgaggtaaga tattggctaa tatcagcagc atatttcaaa 7320
ggtaggaagt cttttattgc agtgggtggg ggagctgaaa caacctattt aaaatattag 7380
taacatccac tttacttctc aacataaatt ttgcctgtgt ttttaaactt aaaacagttt 7440
actgaattat gttttgaaac ttcagataat aaggctctta gcattgtgag tcataattct 7500
gaaatggacg ggttctgtgc ttccaggcct ggacttacaa atgagggagg ggggttctat 7560
ttcagtttat ggcaagtcac agttttgtgc aatgtggttt atttttacag ataaggaaac 7620
tgaagcttgg agaggttaag tgacttttcc aagttcacac agtaattcag tgaagcaagc 7680
attcagaatt ttgactcctg tccaatgctt tctcaagcac atcaactttg tatggcttcc 7740
ctaatgctag agaaagggcc ctgtgtggct tctacctgcc atttgctccc tggccttagt 7800
cagggagagg gaatcagatg gaggctttct actgagcatt tgttaattag cattgaacat 7860
```

atcttctcct gggaaacact gtcccctttc ttgctcttta atgaaatgtg ctttctgatg 7980 cgtaatttga tctaagctct tctttaaggt aaatttagtc cctggtgaaa ggtgactgga 8040 tcaacagcca cctgtaagag gaaccctcca tttctcagta ctttgcactc actgcacatc 8100 ctgaaaaggg gggcaggatt cttacacaaa catgaatgaa gtcacaaatg caggaataaa 8160 ctaaactggt aatggtgtcc ctagatagca gataaggtga ggtaagctat ctccggtcaa 8220 atgcaaagtc cggggtggga ctaagacctg gacaagcttg tttaaactta tagagagctg 8280 aaatgacaaa gaaaagggaa accaggtggc ttcccttcta aatctagtgt cccatcagat 8340 tgcttcttta ggcttcagag agaactgttc gggagaacaa agagaaaaat aggtgagttg 8400 tatgtagcag ggtgatacat ttgaacagcg gttttcaaat tttgctgccc attaggatta 8460 ccagaagaga gttttaaaat ttttatgttt aggtgcagtg gtctgttcct tgtagtccca 8520 gctactctgg aggctgaggc gggaggatca cttgagctca agggtttgag actccatctc 8580 aaaatctcaa aaaaaagaag aaaaaaaaaa gaaaagaaag tttaagcaca gtgggtacct 8640 catgcctata atcctagcac ttttggaggc caaggcagga ggattgcttg aggccaggaa 8700 tttgagacca gcctgcataa catagtgaga cccccatctc tgcaaaagca accaaccaac 8760 caaacttaaa aaaaatccct gtgtccaggc cacatcccag gctaattaat tcataatccc 8820 tgaggatagg atccaggcat tagtttgata aagctcctca ggtgattcca atgagaatac 8880 aaagatggtg acacaatgat gagacccaca tggaggactg ccctttccat cataccttcc 8940 accetgetce teacagatet tacetgaget aaacttggee acaattggga cacagacaaa 9000 atgaactctc aatgctaaat cttcccatca ggtcccctcc ctacagtgcc cacaaccaca 9060 cattaacttc cttgtatcct ttcccagtga aaaatctgct tccatgaata gaatttgata 9120 taatttacac cttactgtaa gtttaagtga ttgcatttct ttcccaggta tgggtatctt 9180 gaagcatatt tttttctttt ttaattgata tttgagccat atttcttttt ttttctttct 9240 ttttttttt tttttttt ttgagacgga gttttgctct cattgcccag gctggagtgc 9300 aatggcatga tctcggctca ccgcaacctc cacctcccag gttcaagcga ttctcctgcc 9360 tcagccttcc caagtagctg ggattacagg catgtgccac caagcccggc taattttgta 9420 tttttagtag agatggggtt tctccatgtg ggtcaggctg gtctcaaact cccgacctca 9480 ggtgatctgc caacctcggc ctcccaaagt gttgggatta caggcgtgag ccatcgcgcc 9540 cggccaccat atttctaatt gtaaggtgaa aggctttgtt ctacagagtt caagcatcat 9600 ccacccatta aggctggagt gaagtggcac aatcatagct cactgcagac tctacctccc 9660 aggettaggt gateeteeca ceteagette etgaataget gggaetaeag geatgeacaa 9720 tcatgcccag ctaattaaaa tattttttc tgtagagatg aggtttcact atgttgccca 9780 ggctgtctgg aatacctggg ctcaagggat cctcctgcct tgtccccaca aagtgctgag 9840 agtacagatg taagccactg cctctggccc acttacttat tattgacact gaacaatgct 9900 aattggtagc ttccataatt atgaattgat tctgtaacta ttgctactga ctacttctta 9960 gggaaatatc tcatcttctc ctccttactc ctctttccta aatgtagaca cataataatc 10020 ctttgcaacc cagacctact aatgtaacta tggcctatgt aacacagtag actaacaggc 10080 acaatgattg gtacacctgg tgctaagtga gaaaaagata tttgtttcca gaacaggaat 10140 atcttagatc aaacataaga atgttctttt aatgaaaatt tctttgactt caaaggactc 10200 aacacttaac atggaattca taccattttg gagctgggac ttcagagatc tgacactctc 10260 attgtcattg tgcacagtga ttcagacctg agttaaagtc ccagctctag aacattctaa 10320 tatttgtgat cttgggaaaa tttcttaatc tctcccagag tttgttttct tattttttt 10380 tgggacagag tttcactctt gttgcccagg ctggagtgca atggcacgat cttagctcac 10440 cgcaacctcc gcctcccagg ttcaagcgat tctcctgcct caccctccct agtagctggg 10500 attacaggca tgtgccacca cgcccggcta attttgtatt tttttagtag agacggggtt 10560 tetteatatt geteaggetg gteteaaact eccageetea ggtgatetge ecacetegge 10620 ctcccaaagt gctggattac aggcatgagc caccgcgcct ggccagcctt ttttttttt 10680 ttgagacgga gtctcgctct gtcgcccagg ctggagtgca atggtcgccc aggctggagt 10740 gcaatggtgt gatctcggct cactgcaatc tccgcctcct gggttcaaac gattttcctg 10800 cctcagcctc ccaagtagct gggattacag gtgtgcgcca tcacacccag ctaatttttg 10860 tatttttagt agagatgagg tttcaccttg ttggccaggc tggtcttgaa ctcctgacct 10920 caagtgattt gcccacctca gcctcccaaa gtgctgagat tacaggcatg agctgctgtg 10980 cccggctgat ttctcttctt taaaatgagg gtactgccat acaaaggaag gaaattctga 11040 tacatgctac aacatgaatg aactttgtaa acattatgct ttcagacaaa tttgacttta 11100 attgagaaaa aaagagaaaa catactaagt gcaataaagc agacacaaaa ggacaaatat 11160 tgtatgattc cattagtatg aggtacccaa acattatatg agtccattaa tatgaaattt 11220 ggcaaggtca cacatacaga aagcagagta gaggctaaca gggctaaggg aatgggagaa 11280 tggggattta ttgtttaacg gttacagttt ctgtttgatg atgaaaaaga tattgaaaca 11340 gcagtaatgg ttacataaca tagtgaatgt acttaatgcc actgaattgt acacttaaaa 11400 atggttaaaa tggtaaattt tattacacat attttacaat aaaaaaattt tagccaggtg 11460 tggtggcatg cacctgtaat cccagctgtt caggaggctg aggcaggaga atctcttgaa 11520 ccctggaggt ggaggtttca gtgagccgag acgtgccact gcactccagc ctgggcaaca 11580 gagtaggact tggtctcaaa aaaagaaaaa aattttttt gtaataataa gggagttggg 11640 gctgggcgtg gtggctcacg cctgtaatcc cagcactttg ggaggccaaa gtgggcggat 11700 catgaagtca ggagatcgag accatcctgg ctaacacagt gaaaccctgt ctctactgaa 11760 aatataaaaa attagccagg tgtggtggcg ggcgcctgta gtcccagcta cttgggaggc 11820 tgaggcagga gaatggtgtg aacccgggag gcggagctcg cagtgagcca agatcgcgcc 11880 actgcacccc agcctgggcg acagagcgag actccgtctc aaaataataa aaataaataa 11940 ataaataaat aaaataataa taataacgga gttgggagga aaaagaggaa atgcaaaaag 12000 ggcctagcac agtacctgaa tgctccacaa atattagcca tgggtgttag ttattatttg 12060 aatgtcaaaa gctgaatgaa gccctggggt aagaaaggtc acatgtgccc aaggtcacat 12120 agetteaagg tecacactag attgaaaace aagttttetg ttttettate tagtaetetg 12180 taacaccagg actgagatac tctctattcc aaaatgtgtt ttttctgatc tgggaatacc 12240 taggttgagt ggcccaggga tcaataacct gagagatgag gctctttact tccaaatgta 12300 aacagagece ceaaaactet acetttgeet tettteetet ettgetgtte ttgetatetg 12360 ccaacttcca tctaaagtac tcccctctct ccctctagat ctgtttggct gctgtcctgg 12420 tttcttcttc tcactaaata tctgggtttc tgattgtttc ctttatttcc cagatgtact 12480 ggtttgcatt tttcccccag tcacatcctt tgtgttctct aatccagatt tctagactct 12540 gtaggggaga gagaaggttt tttttttcc tctctagagt ttttaagtga atagagtatt 12600 tcctgcccat cacttatatg caataactgt tctgttaggt tttgatgctc tggttaggga 12660 agctgagcaa aaacggctgg aaaacagatt tttcagactg tttcttggtg atgtcttagg 12720 tcactgcaga attttggctt ttaaaatatg taacaaaggc tcagcatttg catgttgtat 12780 atggcacata ttgcttacaa gaaggcaaaa gactcctgga aacattactg gcaccctaga 12840 ctactgacta aatgtcttct gatactcatg atgatatcca taatttcaca ggtacaccaa 12900 aggatacatg tgcccctaaa taagagccct tcctccctaa ctgtggagca tgctctgggg 12960 tagaaggaag tcagatgcct gaagatcaca taagtgaata gaaaccctgt ctataaaaaa 13020 ttagggaaaa ggagagetet cattetgttt tgcagaatgg atgetgeece atteatgatt 13080 aagaaaattt attaatttaa aagaaaacca gaaaatgtga aatttatata ttataagctt 13140 ataagatcca ggaggaattt tagatacgat caaatagagc cacctcattt tgcagatgag 13200 gcccaatgac atccagatca taagtagcct aggatctttc actccagggg aattctgatg 13260 agaaaatcct taggctttct tacggtagat cttaacagag ggtgctactg cttccttgct 13320 ccttacattt gttcctgcct ttcatagctc aaaggcaaat tttcatcaaa aatttgttga 13380 tgccattggg tttaaacctt tactgtttct atggggatgg ctttgtaaca gcattaccat 13440 gcccccaggt ggaagctata tcttaaaggg cttgaaaatc cattcaagac agccgctaaa 13500 gatagetttt gaeteetea cagaagattt tteeteaget atgatatggg gaatgggtga 13560 gcagatggga gaagtaggaa gaagaggaga gaatgcttct tggggggtttg gaggggtgtt 13620 cagcatagtt ccacaatcaa accagcagga gagcagaact gtgaggcaac tctggggagg 13680 agttgaggct ctaggggaag tctcctgtag agcacaagca ggaaacatcc ggcctatagc 13740 agcattaaga agggctaatg tgtctcagga gggaaggatg ccatcaccat agaacctcta 13800 aatatgggca cagtaggatc ccagaaaagc agtgtttcgg ggaggatgcg ttctgcccaa 13860 aacatgtctg ttaaggttat tttgtagcac atggagcgct gatttgacct caagtttttg 13920 ttttttaaca ggtggaaagg caagtttaat ctacaatttt agtcgccacc aatacactct 13980 cttagagctt ttcatgacac gtctcataaa gaaatgctga tggccgggag cggtggctca 14040 cgcctgtaat cccagcactt tgggaggcca aggcgggcag attacgagat caggagatcc 14100 agagcatect ggetaacaeg gtgaaacece gtetetaeta aaaataeaaa aaattageee 14160 ggcgtggtgg caggcgccta tagttccagc tactcgggag gctgaggcag gagaatggcg 14220 tgaacctggg aggtggagcg ggcagtgagc caagattgca ccactgcact ccaacctggg 14280 cgacagagcg agactetete teaaaaaaaa aaaaagaaaa aaagaaaaag aaaagaaaag 14340 aaaaaaaaag aaatgctgac gtttgccaag aggttcctga gttttggtca tactacagca 14400 cttgcaggca gtgtcactgc attcacatat aatgataata acgatattca cacatattaa 14460 gcacttattt atgctaggta tttttccaag ggatttacac atattaactc atttagattt 14520 tcacaacaac ctaatgaggt agctagtata cacatcttta tttcacagat gaggaaactg 14580 aagcatagag aggcaaaata aaccagccaa ggtcacatag ctaaccaagt ggtggagctg 14640 ggatttgtct aaaagtctgg tttcagaacc cttgtgctta atcctatact atactgttgg 14700 gtgtatcaac tgtatgctaa acagttgcct gtctggagcc aggacttcca gactttcagt 14760 ctgcacatat ggagccatac cactgacaag tatgtccaaa acttctttga tcctaagaat 14820 tacctggaca attgcaaaat atatagattc ccacaccctg gctcagatgt actcacaatc 14880 aggcaagttt ttaaaaccca ggtttagtgg gtttagtgag cactaccagc cagccctgag 14940

```
cattaggaaa ttgaagtttt tgtcctgatt ttgcttctgt ctctcagact ctgagcaatt 15000
tcactcttca attccctgct tgctctactg tctgcctgtc acttaacgga atgttacaag 15060
aatacataca atttttcccc ctcataaggg acacctgttg cttcaaaaac acggtatcct 15120
gttttttgct ttgctttcct tgaagcacaa acctaagccc ctcatccaga cctagccttc 15240
agctgtcctc caggtgacac gcatacacac cccaaaccag gctgcattct gaccgacctt 15300
agetetetee etetgggage tetgategge teteagttea geceaacaat gagaaacttt 15360
tttctcgtct ccctcagggg agccttcacg tttatccaat tcattctctt gcaacccaac 15420
tctccagaaa gaaaaggggg gaaaatccca ccccgaagag acggtcttca ggtctgagga 15480
cgttacttag caacggcaca aagaccagtg agcaaaggga gacctgagga gaaaactctt 15540
gggtggggag acagagccag tttgaaaact ccatttcatc cagagaaaaa caaggaaaac 15600
acaaacagaa tcaatcccaa gtaacaagcg gggcttctcc ccagcgcagg tcatctctta 15660
ctccctgcat ctcaactcct tcaaaccccc agtgaccaag tccgcccccg cctggtttcg 15720
cccatggccc gagtgccctc cccttgccct ggcctgaccc acacaggctt ggacttaggg 15780
gcccccaccc ctccccaggc acccaccgtt ctcagacgcg ctgggacctt cgcagtccga 15840
gattaactgt tggggtttcc gctgctttcg ccgagacatt cccgggtaga gagttgggag 15900
agggagggc aacgctcact tggtcttaac cggggtgacc tggtctcgtc tcccccttgg 15960
gtccgaagcc aattgatgcc tctcccccag cgcaaatcac tgtgaagcag agatgttctt 16020
ctttcccaga gacacagact ctctctct ctctgattct ctgttcttga ctctctctct 16080
```

```
<210> 3
<211> 1002
<212> PRT
<213> Mus musculus
<400> 3
Met Ala Gln Glu Thr Gly Ser Ser Ser Arg Leu Gly Gly Pro Cys Gly
Glu Pro Ala Glu Arg Gly Gly Asp Ala Ser Glu Glu His His Pro Gln
                                25
Val Cys Ala Lys Cys Cys Ala Gln Phe Ser Asp Pro Thr Glu Phe Leu
                            40
Ala His Gln Asn Ser Cys Cys Thr Asp Pro Pro Val Met Val Ile Ile
                                            60
Gly Gly Gln Glu Asn Pro Ser Asn Ser Ser Ala Ser Ser Ala Pro Arg
                                        75
Pro Glu Gly His Ser Arg Ser Gln Val Met Asp Thr Glu His Ser Asn
                85
                                    90
Pro Pro Asp Ser Gly Ser Ser Gly Pro Pro Asp Pro Thr Trp Gly Pro
            100
                                105
Glu Arg Arg Gly Glu Glu Ser Ser Gly Gln Phe Leu Val Ala Ala Thr
        115
                            120
                                                125
Gly Thr Ala Ala Gly Gly Gly Gly Leu Ile Leu Ala Ser Pro Lys
    130
                        135
Leu Gly Ala Thr Pro Leu Pro Pro Glu Ser Thr Pro Ala Pro Pro
145
                    150
                                        155
Pro Pro Pro Pro Pro Pro Pro Gly Val Gly Ser Gly His Leu Asn
                                    170
Ile Pro Leu Ile Leu Glu Glu Leu Arg Val Leu Gln Gln Arg Gln Ile
                                185
                                                    190
His Gln Met Gln Met Thr Glu Gln Ile Cys Arg Gln Val Leu Leu
                            200
Gly Ser Leu Gly Gln Thr Val Gly Ala Pro Ala Ser Pro Ser Glu Leu
                        215
                                            220
Pro Gly Thr Gly Ala Ala Ser Ser Thr Lys Pro Leu Leu Pro Leu Phe
225
                                        235
```

Ser Pro Ile Lys Pro Ala Gln Thr Gly Lys Thr Thr Ala Ser Ser Ser 250 245 Ser Ser Ser Ser Ser Gly Ala Glu Pro Pro Lys Gln Ala Phe Phe 265 His Leu Tyr His Pro Leu Gly Ser Gln His Pro Phe Ser Val Gly Gly 285 280 Val Gly Arg Ser His Lys Pro Thr Pro Ala Pro Ser Pro Ala Leu Pro 295 300 Gly Ser Thr Asp Gln Leu Ile Ala Ser Pro His Leu Ala Phe Pro Gly 310 315 Thr Thr Gly Leu Leu Ala Ala Gln Cys Leu Gly Ala Ala Arg Gly Leu 330 325 Glu Ala Ala Ala Ser Pro Gly Leu Leu Lys Pro Lys Asn Gly Ser Gly 345 Glu Leu Gly Tyr Gly Glu Val Ile Ser Ser Leu Glu Lys Pro Gly Gly 360 Arg His Lys Cys Arg Phe Cys Ala Lys Val Phe Gly Ser Asp Ser Ala 375 Leu Gln Ile His Leu Arg Ser His Thr Gly Glu Arg Pro Tyr Lys Cys 395 390 Asn Val Cys Gly Asn Arg Phe Thr Thr Arg Gly Asn Leu Lys Val His 410 Phe His Arg His Arg Glu Lys Tyr Pro His Val Gln Met Asn Pro His 425 420 Pro Val Pro Glu His Leu Asp Tyr Val Ile Thr Ser Ser Gly Leu Pro 435 440 Tyr Gly Met Ser Val Pro Pro Glu Lys Ala Glu Glu Glu Ala Gly Thr 455 450 Pro Gly Gly Gly Val Glu Arg Lys Pro Leu Val Ala Ser Thr Thr Ala 475 470 Leu Ser Ala Thr Glu Ser Leu Thr Leu Leu Ser Thr Gly Thr Ser Thr 490 485 Ala Val Ala Pro Gly Leu Pro Thr Phe Asn Lys Phe Val Leu Met Lys 500 505 Ala Val Glu Pro Lys Ser Lys Ala Asp Glu Asn Thr Pro Pro Gly Ser 525 520 Glu Gly Ser Ala Ile Ala Gly Val Ala Asp Ser Gly Ser Ala Thr Arg 535 540 Met Gln Leu Ser Lys Leu Val Thr Ser Leu Pro Ser Trp Ala Leu Leu 550 555 Thr Asn His Leu Lys Ser Thr Gly Ser Phe Pro Phe Pro Tyr Val Leu 570 565 Glu Pro Leu Gly Ala Ser Pro Ser Glu Thr Ser Lys Leu Gln Gln Leu 585 580 Val Glu Lys Ile Asp Arg Gln Gly Ala Val Ala Val Ala Ser Thr Ala 600 Ser Gly Ala Pro Thr Thr Ser Ala Pro Ala Pro Ser Ser Ser Ala Ser 620 615 Gly Pro Asn Gln Cys Val Ile Cys Leu Arg Val Leu Ser Cys Pro Arg 630 635 Ala Leu Arg Leu His Tyr Gly Gln His Gly Gly Glu Arg Pro Phe Lys 645 650 Cys Lys Val Cys Gly Arg Ala Phe Ser Thr Arg Gly Asn Leu Arg Ala 670 660 665 His Phe Val Gly His Lys Thr Ser Pro Ala Ala Arg Ala Gln Asn Ser 680 685 Cys Pro Ile Cys Gln Lys Lys Phe Thr Asn Ala Val Thr Leu Gln Gln 700 695 His Val Arg Met His Leu Gly Gly Gln Ile Pro Asn Gly Gly Ser Ala

```
705
                    710
                                        715
Leu Ser Glu Gly Gly Ala Ala Gln Glu Asn Ser Ser Glu Gln Ser
                                    730
Thr Ala Ser Gly Pro Gly Ser Phe Pro Gln Pro Gln Ser Gln Gln Pro
            740
                                745
                                                    750
Ser Pro Glu Glu Glu Met Ser Glu Glu Glu Glu Glu Asp Glu Glu Glu
                            760
                                                765
Glu Glu Asp Val Thr Asp Glu Asp Ser Leu Ala Gly Arg Gly Ser Glu
                        775
                                            780
Ser Gly Gly Glu Lys Ala Ile Ser Val Arg Gly Asp Ser Glu Glu Val
                    790
                                        795
Ser Gly Ala Glu Glu Val Ala Thr Ser Val Ala Ala Pro Thr Thr
                805
                                    810
Val Lys Glu Met Asp Ser Asn Glu Lys Ala Pro Gln His Thr Leu Pro
            820
                                825
Pro Pro Pro Pro Pro Asp Asn Leu Asp His Pro Gln Pro Met Glu
                            840
Gln Gly Thr Ser Asp Val Ser Gly Ala Met Glu Glu Glu Ala Lys Leu
                        855
                                            860
Glu Gly Ile Ser Ser Pro Met Ala Ala Leu Thr Gln Glu Gly Glu Gly
                    870
                                        875
Thr Ser Thr Pro Leu Val Glu Glu Leu Asn Leu Pro Glu Ala Met Lys
                885
                                    890
Lys Asp Pro Gly Glu Ser Ser Gly Arg Lys Ala Cys Glu Val Cys Gly
            900
                                905
Gln Ser Phe Pro Thr Gln Thr Ala Leu Glu Glu His Gln Lys Thr His
                            920
                                                925
Pro Lys Asp Gly Pro Leu Phe Thr Cys Val Phe Cys Arg Gln Gly Phe
                        935
                                            940
Leu Asp Arg Ala Thr Leu Lys Lys His Met Leu Leu Ala His His Gln
                    950
                                        955
Val Pro Pro Phe Ala Pro His Gly Pro Gln Asn Ile Ala Thr Leu Ser
                                    970
                965
Leu Val Pro Gly Cys Ser Ser Ser Ile Pro Ser Pro Gly Leu Ser Pro
            980
                                985
                                                    990
Phe Pro Arg Lys Asp Asp Pro Thr Met Pro
        995
                            1000
```

<210> 4 <211> 4547 <212> DNA <213> Mus musculus

<400> 4

```
atggcgcagg aaaccgggag cagctctcga ctcgggggac cctgcgggga gcctgcggag 60 cgcggaggtg atgctagcga ggaacaccac ccccaagtct gtgccaaatg ctgcgcacaa 120 ttttctgacc cgaccgaatt cctcgctcac cagaactcat gttgcactga cccaccggta 180 atggtgataa ttggaggcca ggagaatccc agcaactctt cagcctcctc tgcgccccga 240 ccagagggcc acagtaggtc ccaggtcatg gatacagagc acagcaatcc cccagattct 300 gggccattct ggcccccga tcccacttgg gggccagagc ggaggggaga ggaatcttct 360 gggcaattcc tggtcgctgc cacaggtaca gcggctgggg gaggtgggg ccttatcttg 420 gccagtcca agctgggag aaccccatta cctccagaat ccactcctgc acccctcct 480 ccccaccac cccctcccc tccaggtgta ggagtggcc acttgaacat tcctctgatc 540 ttggaagagt tgcgggtc acttggctcc aggtgctgc cagattcacc agatgcagat gactgaacaa 600 atctgccgcc aggtgctgct acttggctcc tcttccacca agcccctcct gcctcttct 720 agtcccatca agccagcgc taaccgcc taagcaggct tcttccacca tttaccatcc actgggatca 840 tcctctggag ctgaaccgc taagcaggct tcttccacca tttaccatcc actgggatca 840
```

cagcatcctt tctctgtagg aggggttggg cggagccaca aacccacccc tgccccttcc 900 cctgcgctgc caggcagtac ggatcagctg attgcttcac ctcatctggc attcccaggc 960 accactggac tcctggcagc tcagtgtctt ggggcagcaa ggggccttga ggctgctgcc 1020 tccccagggc tcctgaagcc aaagaacgga agtggtgaac tgggctatgg ggaagtgatc 1080 agtteettgg agaaaceegg tggaaggeac aaatgeeget tttgtgcaaa agtattegge 1140 agtgacagcg ccctgcagat ccaccttcgt tcccacactg gtgagaggcc ctataagtgc 1200 aacgtctgtg gtaaccgttt cacaactcgg ggcaacctca aagtacattt tcaccggcat 1260 cgtgagaagt acccacatgt gcaaatgaat ccacatccag taccggagca cctagactac 1320 gtcatcacca gcagtgggct gccttacgga atgtctgtgc caccagagaa agcagaagag 1380 gaggcaggca caccaggcgg aggtgttgaa cgcaaacccc tagtggcctc caccacagca 1440 ctcagtgcca cagagagcct gacactgctc tccactggca caagcacagc agtggctcct 1500 gggctcccta ctttcaacaa gtttgtgctc atgaaggcag tggaacccaa gagtaaagcg 1560 gatgagaaca cgccccagg gagtgagggc tccgccatcg ctggagtagc agacagtggc 1620 tcagcaaccc gaatgcagct aagtaagctg gtgacgtcac taccgagttg ggcactgctt 1680 gcttcgcctt ctgagacctc aaagctgcag cagctagtag aaaagattga ccgccaagga 1800 gctgtggcgg tggcatctac tgcctcggga gctcccacca cttctgcccc tgcaccttcc 1860 tecteegett etggacetaa eeagtgtgtg atetgtette gggteetgag etgeeetegg 1920 gctctacgcc tgcattatgg ccaacatgga ggtgagcggc ccttcaagtg taaagtgtgt 1980 ggccgagctt tctccacaag gggcaatttg cgcgcacatt tcgtgggtca caagaccagt 2040 ccagctgccc gggctcagaa ctcctgcccc atttgtcaga agaagttcac taatgctgtc 2100 actctgcagc aacatgttcg gatgcacctg gggggccaga tccccaatgg gggttccgca 2160 ctttctgaag gtgggggagc tgcccaggaa aacagctctg agcagtctac agcctctgga 2220 ccagggagtt tcccccagcc gcagtcccag cagccatctc cagaagagga gatgtctgag 2280 gaagaggaag aggatgagga agaggaggaa gacgtgacag atgaagattc cctagcagga 2340 agaggctctg agagtggggg agagaaggcc atatcagtac gaggtgactc agaagaggta 2400 tctggggcag aggaagaagt ggcaacatca gtagcagcac ccaccactgt gaaggagatg 2460 gacagtaatg agaaagcccc tcaacacact ctgccgccac ctccgccacc acccgacaac 2520 ctggatcatc cccaacccat ggagcaggga accagtgatg tttccggagc catggaggaa 2580 gaagccaaac tggagggaat ctcaagcccg atggcagccc tcacccaaga aggggagggc 2640 accagcaccc ctttggtgga agagctgaac ttaccggaag ccatgaagaa ggatccagga 2700 gagagcagcg gcaggaaggc ctgtgaagta tgtggccaga gctttcctac ccagacagct 2760 ctggaggagc atcagaagac ccatcccaag gatgggccac tcttcacttg tgtcttctgc 2820 aggcagggct tccttgaccg tgctaccctc aagaagcaca tgctgttggc tcaccaccag 2880 gtaccgccct ttgcacccca tggccctcag aatattgcta ctctttcctt ggtccctggc 2940 tgttcctcct ccatcccttc tccagggctc tccccattcc ctcgaaaaga tgaccccacc 3000 atgccatgag cctgctttct gtacctggtc ctctatgacc cagagagcag aaacctgaga 3060 gcttcataga ggaactccaa gatttactca ccctcctctt gtcctttctc aagtcctgac 3120 atgatgtttc tagtggcttc ttctctagtc cctgagcttg acaattgcct ttgaaagaga 3180 atgtcccctt aagaaatttt tatcaccttt ttgttctgtg taactaaggg aaacaaattc 3240 cctatagctt ttacattctc aagggggagc tctctcctct tctccctttc cctttggcag 3300 gtatactaga acccccatcc ttggagtggc agccttggtc caaggggctg gcaactgtcc 3360 atggaaggcc cagcgttact ccttggtgat cttgaccacc ctgcaagact ttctagggcc 3420 gggaccttct tgagaagctt gtaaggggtg gtaggtttct ttctgcaacc actacccagt 3480 tttccactga gccctggagt tctggaccta cctgcattgc cactcgggcc ctagtaccat 3540 cattgctgtg aaagcccagg aactgtgttt cacaaggtga ctccagtgac atgatccaga 3600 gaggcaaaga acatagcctc cggaagttga ggctgtgccc aacaagcaca ccggaagaaa 3660 gaagaaacta taacttettt eteetteece eetgeteeag agagtgetgg caataaagat 3720 attctagcaa ttggtgactc accctagaag gtagggacaa gtgaaggact gggacccttt 3780 ttgcagtatg ttccttgact cgccacattg aggcaaagat agtggctggt caagatgcca 3840 ggactactcc agcttcccat catgtcctct caaccaacaa gcaggtttcc taccaagagg 3900 tctctcgtgt gatagtttag ggagtatgaa gtttctaact ctaaagaatc ctgttggtga 3960 ggatgattat ttaagcaatg atggggagtt gagggttgtt gctaaaacag gcattgctgg 4020 gaatctattt gatgaagaac aggacttgat gtaaggggac tcgatgttca gctcttgtga 4080 gtatgaacgt tttctttgag ctaatggtga tgtggtatgc agaggtacca ggggccatgg 4140 gggtgtgtgt gcttcctgtc actagaatgt ttttagtttt agatgactcc ctattttatt 4200 ccctcacccc ttgtatttcc cttgctgtct tctcaaaacc cctttcctcc cccagttttg 4260 cctgaccatg ggccagagct tatgtcttat tttttttcta gaagttgaga gacagagctt 4320 caagtggttt cccccgtct ctgtcttgta gtgagatgta gtatttactc ttaacatagg 4380

	atcctgtgga acaggtgttc tgagaagact gaattttgct gttagctgtt gtcaatgatg attctctaaa gtagtgggct ccagagctcc ctaacacagt gaaatgtgta agagccgaga ggggagatac tagaattttt tccttcatca ttaaaggtgt tttggct												
	<210> 5 <211> 22 <212> DNA <213> Artificial Sequence												
	<220> <223> derived from human Sal2 gene												
	<400> 5 ccacaaccat ggcgaatccg ag	22											
	<210> 6 <211> 24 <212> DNA <213> Artificial Sequence												
F-11 1F-15	<220> <223> derived from human Sal2 gene												
	<400> 6 ggtgatggaa ggcgaacagc cagg												
	<210> 7 <211> 26 <212> DNA <213> Artificial Sequence												
å	<220> <223> derived from human Sal2 gene												
ad dan dan	<400> 7 cttgttaatt agagcctcgg tatacc	26											
	<210> 8 <211> 22 <212> DNA <213> Artificial Sequence												
	<220> <223> derived from human Sal2 gene												
	<400> 8 gcacggagga cccagaatct gg	22											
	<210> 9 <211> 63 <212> DNA <213> Polyoma virus												
	<400> 9 gatatacttt gtaatgtgca agaaggcgac gaccccttga aggacatatg tgaatatagc tga	60 63											
	<210> 10 <211> 20												

```
<212> PRT
       <213> Polyoma virus
       <400> 10
       Asp Ile Leu Cys Asn Val Gln Glu Gly Asp Asp Pro Leu Lys Asp Ile
                                           10
       1
       Cys Glu Tyr Ser
                   20
       <210> 11
       <211> 19
       <212> PRT
       <213> TMD25 mutant Polyoma virus
       <400> 11
       Asp Ile Leu Cys Asn Val Gln Glu Asp Phe Val Met Cys Lys Lys Ala
       1
                                           10
                                                                15
                        5
      Thr Thr Pro
<210> 12
Ü
      <211> 60
Ű
      <212> DNA
M
       <213> TMD25 mutant Polyoma virus
ũ
      <400> 12
卢
      gatatacttt gtaatgtgca agaagacttt gtaatgtgca agaaggcgac gaccccttga 60
-
, F
      <210> 13
      <211> 16
      <212> PRT
      <213> Polyoma virus
<400> 13
      Asn Val Gln Glu Gly Asp Asp Pro Leu Lys Asp Ile Cys Glu Tyr Ser
                                           10
븚
      <210> 14
      <211> 14
      <212> PRT
      <213> Artificial Sequence
      <223> dervived from Polyoma virus large T antigen
      <400> 14
      Asn Val Gln Glu Gly Asp Asp Pro Leu Lys Asp Ile Cys Glu
      <210> 15
      <211> 10
      <212> PRT
      <213> Artificial Sequence
```

```
<220>
       <223> dervived from Polyoma virus large T antigen
      <400> 15
      Asn Val Gln Glu Gly Asp Asp Pro Leu Lys
                        5
      <210> 16
       <211> 7
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> dervived from Polyoma virus large T antigen
      <400> 16
      Asn Val Gln Glu Gly Asp Asp
       1
      <210> 17
<211> 4
      <212> PRT
      <213> Artificial Sequence
      <220>
|=3
      <223> dervived from Polyoma virus large T antigen
1
100
      <400> 17
      Asn Val Gln Glu
Ē
늘
       1
1
ļ.
      <210> 18
g
      <211> 15
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> dervived from Polyoma virus large T antigen
      Asn Val Gln Glu Gly Asp Asp Leu Lys Asp Ile Cys Glu Tyr Ser
      <210> 19
      <211> 15
      <212> PRT
      <213> Artificial Sequence
      <223> dervived from Polyoma virus large T antigen
      <400> 19
      Asn Val Gln Glu Gly Asp Asp Pro Lys Asp Ile Cys Glu Tyr Ser
```

```
<210> 20
<211> 15
<212> PRT
<213> Artificial Sequence
<220>
<223> dervived from Polyoma virus large T antigen
Asn Val Gln Glu Gly Asp Asp Pro Leu Asp Ile Cys Glu Tyr Ser
                                    10
<210> 21
<211> 13
<212> PRT
<213> Artificial Sequence
<223> dervived from Polyoma virus large T antigen
<400> 21
Asn Val Gln Glu Gly Asp Asp Ile Cys Glu Tyr Ser
                                    10
```